UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,784	06/10/2005	Michael McNiven Rumsey	TTP104246	4306

20280 7590 10/30/2008

MOTOROLA INC
600 NORTH US HIGHWAY 45
W4 - 39Q
LIBERTYVILLE, IL 60048-5343

EXAMINER	
YU, LIHONG	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
10/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DOCKETING.LIBERTYVILLE@MOTOROLA.COM
ADB035@Motorola.com

Office Action Summary	Application No.	Applicant(s)	
	10/538,784	RUMSEY, MICHAEL MCNIVEN	
	Examiner	Art Unit	
	LIHONG YU	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed on August 29, 2008, have been fully considered but they are not persuasive.

(1) **Applicant's Arguments:** "The claimed invention is used to process received radio signals of two possible communication systems ('first type,' and 'second type'), and selects appropriate configurations for sharing various elements (ADC, Decimator, FIR, and Sample Rate Adaption). As such, the presently claimed invention addresses signal response issues, not demodulation issues. In contrast, Diab et al. describe as system that is used to implement a new multi-channel demodulation process by adding premodulation sample compression".

Examiner's Response: The applicant's invention is for receiving two types of different analog signals and converting these two types of signals to digital signals to be processed. The prior art reference Diab is for receiving N different analog signals from N modulators and converting these signals to digital signals to be processed (see Diab at col. 27, lines 59-67). Diab describes sharing of ADC, decimator, low pass filter, and sample rate adaptation (see Diab at Fig. 18, items 199 and 1820, and col. 27, lines 59-67 and col. 28, lines 1-39). Diab's invention

addresses signal response issue by selectively demodulating signals of the time division multiplexing (TDM) system (see Diab at col. 2, lines 11-33).

(2) **Applicant's Arguments:** "Diab et al. do not disclose the filter recited in claim 14 or 20. The filter in claim 14 or 20 must be 'capable of filtering the signal in a first manner which is required when the receiver is of a first type and in a second manner which is required when the receiver is of a second type'".

Examiner's Response: Diab describes a set of filters (see Diab at Fig. 18, items 1840, 1830, and 1834) that are filtering signals with respect to different demodulating signals and the corresponding channel mixers (see Diab at col. 28, lines 40-53).

3) **Applicant's Arguments:** "Diab et al. do not disclose the adjuster in claim 14 or 20. The adjuster in claim 14 or claim 20 'is adapted to perform adjustments to the sample rate when the receiver is of the second and not the first type', where 'the adjustments comprise altering the sample rate before the signal is filtered to permit the filter to perform filtering in the second manner and altering the sample rate after the signal has been filtered to provide the signal with a sample rate required by the second type of receiver'".

Examiner's Response: Diab describes the adjuster in claim 14 or 20 (see Diab at Fig. 18, item 1850, the adaptive algorithm module). Diab describes altering the sample rate before the signal is filtered by one of the filters, namely 1840, 1830 or 1834 (see Diab at Fig. 18, item 1820,

col. 28, lines 27-63). Diab describes altering the sample rate after the signal has been filtered by one of the filters, namely 1840, 1830 or 1834 (see Diab at col. 29, lines 26-40). Diab describes the sampling rate adjustments are based on signal types (see Diab at col. 29, lines 26-40).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 14-17, 19-22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diab et al (US 6,229,856 B1) in view of Peterzell et al (US 6,694,129 B2).

Regarding claims 14 and 20:

Diab discloses an apparatus for preparing a signal, to be processed by a receiver which will attempt to recover information conveyed by the signal (*see Diab at col. 2, lines 11-33, col. 27, lines 59-63, where Diab describes selecting certain harmonics of a signal for demodulation by a receiver and multi-channel pre-demodulation*), the apparatus comprising:

- a filter adapted to filter the signal in a digital form (*see Diab at Fig. 18, block 1820, 1840, 1830, and 1834*) having samples appearing at a sample rate (*see Diab at col.*

28, lines 27-63, where Diab describes the received signal is sampled by a A/D converter before is provided to the digital low pass filters),

- an adjuster (*see Diab at Fig. 18, block 1850*) adapted to adjust the sample rate (*see Diab at col. 27, lines 59-65, and col. 28, lines 32-35, where Diab describes an adjustable decimation rate is provided by an adaptive algorithm block*),

- wherein the filter is capable of filtering the signal in a first manner which is required when the receiver is of a first type and in a second manner which is required when the receiver is of a second type (*see Diab at col. 27, lines 59-67, col. 28, lines 1-26, where Diab discuses multi-channel demodulation*),

- the adjuster is adapted to perform adjustments to the sample rate when the receiver is of the second type (*see Diab at col. 28, lines 27-53, where Diab describes the adaptive algorithm block controls sample rate compression*),

- the adjustments comprise altering the sample rate before the signal is filtered to permit the filter to perform filtering in the second manner (*see Diab at col. 28, lines 27-63, where Diab describes reducing the sample rate before digital low pass filtering*), and

- altering the sample rate after the signal has been filtered to provide the signal with a sample rate required by the second type of receiver (*see col. 27, lines 59-65, and col. 28, lines 40-67, col. 29, lines 25-40, where Diab teaches post-demodulation decimation*).

- Diab discloses selective demodulation (*see Diab at col. 28, lines 40-53, col. 28, lines 65-67, col. 29, lines 1-5, where Diab discusses the adaptive algorithm block provides selected demodulation*) except for disclosing performing adjustments to the sample rate when receiver is of the second and not the first type. Peterzell teaches performing adjustments to the sample rate when receiver is of the second and not the first type (*see Peterzell at col. 7, lines 65-67, col. 8, col. 9, and Fig. 5*).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Diab, and performing adjustments to the sample rate when receiver is of the second and not the first type, as taught by Peterzell, thus allowing increasing dynamic range of a receiver, as discussed by Peterzell (*see Peterzell at col. 6, lines 17-27*).

Regarding claims 15 and 21:

Diab discloses the adjuster is adapted to change to said sample rate by a fractional factor (*see Diab at col. 23, lines 1-20, col. 6, lines 35-37*).

Regarding claims 16 and 22:

Diab discloses the filter comprises an FIR filter (*see Diab at Fig. 18, block 1820, 1840, 1830, and 1834*) with adjustable tap coefficients which can be adjusted to allow the filter to perform filtering in the first manner and in the second manner (*see Diab at col. 28, lines 32-35, col. 29, lines 13-25, where Diab describes the adaptive algorithm provides filter coefficients*).

Regarding claim 17:

Diab discloses the filter is adapted to correct errors introduced by the adjuster (*see Diab at col. 28, lines 54-63 and Fig. 18, where Diab describes the output of the filter is also a feedback to the adaptive algorithm block*).

Regarding claims 19 and 24:

Diab does not specifically disclose a participant for a wireless communications network, the participant comprising the apparatus of claim 14. Peterzell teaches a participant for a wireless communications network, the participant comprising the apparatus of claim 14 (*see Peterzell at abstract*).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Diab, and have participant for a wireless communications network, as taught by Peterzell, thus allowing increasing dynamic range of a receiver, as discussed by Peterzell (*see Peterzell at col. 6, lines 17-27*).

3. Claims 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diab et al (US 6,229,856 B1) in view of Peterzell et al (US 6,694,129 B2), as applied to claims 14 and 20 above, and further in view of Czaja et al (US 6,567,666 B2).

Regarding claims 18 and 23:

Diab does not specifically disclose the first type of receiver is a receiver operating according to a 3G telecommunications standard and comprising a rake receiver for operating on the signal and the second type of receiver is a receiver operating according to a 2G

telecommunications standard and comprises an equalizer for operating on the signal. Czaja teaches first type of receiver is a receiver operating according to a 3G telecommunications standard and comprising a rake receiver for operating on the signal and the second type of receiver is a receiver operating according to a 2G telecommunications standard and comprises an equalizer for operating on the signal (*see Czaja at col. 3, lines 65-67, col. 4, lines 1-14, col. 5, lines 13-29*).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Diab, and have first type of receiver is a receiver operating according to a 3G telecommunications standard and comprising a rake receiver for operating on the signal and the second type of receiver is a receiver operating according to a 2G telecommunications standard and comprises an equalizer for operating on the signal, as taught by Czaja, thus allowing better quality of service, as discussed by Czaja (*see Czaja at col. 2, lines 9-20*).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIHONG YU whose telephone number is (571) 270-5147. The examiner can normally be reached on 8:30 am-7:00 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lihong Yu/
Examiner, Art Unit 2611
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611